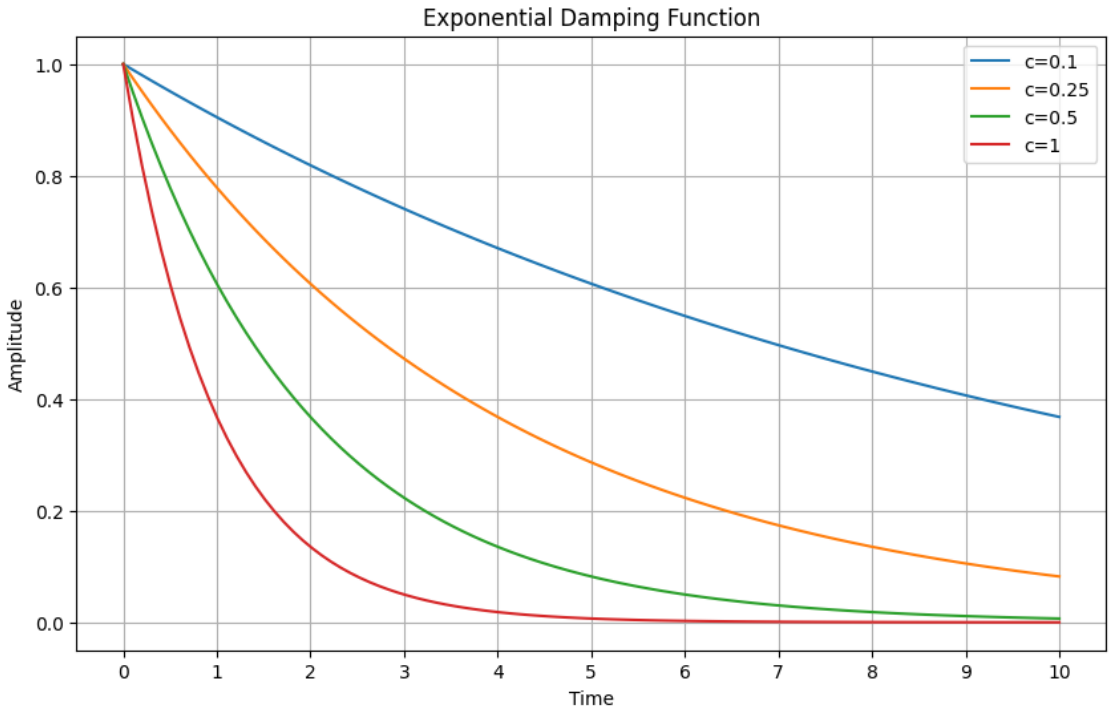
test

February 27, 2024

[ ]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from IPython.display import display
# from IPython.core.interactiveshell import InteractiveShell
# InteractiveShell.ast_node_interactivity = "all"
```

[ ]:
```
# Define the time array
t = np.linspace(0, 10, 100)

# Define the exponential damping function
plt.figure(figsize=(10, 6))
plt.title('Exponential Damping Function')
plt.xlabel('Time')
plt.ylabel('Amplitude')
plt.xticks(np.arange(min(t), max(t)+1, 1.0))  # Set x ticks at every integer

scalings = [0.1, 0.25, 0.5, 1]

for c in scalings:

    y = np.exp(-c*t)
    # Plot the function
    plt.plot(t, y)

plt.grid(True)
plt.legend([f'c={c}' for c in scalings])
plt.show()
```



[ ]:
```
df_10 = pd.read_csv('/Users/weim/projects/lob/results/
  ↪10_lots_fill_probabilities.csv', index_col=0)*100
df_10 = df_10.round(0).astype(int).astype(str) + '%'
df_10.columns.name = 'damping'

df_20 = pd.read_csv('/Users/weim/projects/lob/results/
  ↪20_lots_fill_probabilities.csv', index_col=0)*100
df_20 = df_20.round(0).astype(int).astype(str) + '%'
df_20.columns.name = 'damping'

df_30 = pd.read_csv('/Users/weim/projects/lob/results/
  ↪30_lots_fill_probabilities.csv', index_col=0)*100
df_30 = df_30.round(0).astype(int).astype(str) + '%'
df_30.columns.name = 'damping'

df_40 = pd.read_csv('/Users/weim/projects/lob/results/
  ↪40_lots_fill_probabilities.csv', index_col=0)*100
df_40 = df_40.round(0).astype(int).astype(str) + '%'
df_40.columns.name = 'damping'
```

[ ]:
```
print('10 lots')
display(df_10)
```

```
print('20 lots')
display(df_20)

print('30 lots')
display(df_30)

print('40 lots')
display(df_40)
```

```
10 lots
```

damping no_imbalance level	0.0	0.1	0.25	0.5	1.0
0	85%	84%	86%	86%	84%	82%
1	67%	65%	66%	66%	63%	62%
2	44%	47%	44%	41%	39%	39%
3	26%	29%	27%	24%	22%	22%

```
20 lots
```

damping no_imbalance level	0.0	0.1	0.25	0.5	1.0
0	69%	60%	63%	63%	60%	52%
1	50%	48%	47%	44%	40%	34%
2	28%	32%	29%	24%	21%	20%
3	16%	18%	15%	12%	10%	10%

```
30 lots
```

damping no_imbalance level	0.0	0.1	0.25	0.5	1.0
0	50%	43%	42%	38%	33%	19%
1	31%	31%	29%	25%	20%	11%
2	17%	19%	16%	11%	7%	5%
3	8%	11%	8%	4%	3%	2%

```
40 lots
```

damping no_imbalance level	0.0	0.1	0.25	0.5	1.0
0	28%	23%	22%	17%	9%	4%
1	18%	16%	13%	9%	6%	2%
2	7%	9%	5%	3%	1%	1%
3	3%	4%	2%	1%	0%	0%